Vol. 88, Sect. 14, 1951

PROTOCHORDATA

COMPILED BY

M. BURTON, D.Sc.

PRINTED FOR THE ZOOLOGICAL SOCIETY OF LONDON SOLD AT THEIR HOUSE IN REGENT'S PARK LONDON, N.W.8.

PRICE TWO SHILLINGS

December, 1952

SEPARATE SECTIONS OF THE ZOOLOGICAL RECORD

In addition to the complete bound volume, the separate Sections may be obtained singly, bound in printed paper covers.

The following are the Sections and their prices, viz. :-

	0									
								8.	d.	
1.	Comprehens	sive Zoo	ology					2	6	
2.	Protozoa		•••					7	6	
3.	Porifera			•••	•••	•••		2	0	
4.	Coelenterate	a,						4	0	
5.	Echinodern	ıa						2	6	
6.	Vermes					•••		10	0	
7.	Brachiopod	a						3	0	
8.	Bryozoa							2	0	
9.	Mollusca	***				•••		10	0	
10.	Crustacea						• • •	5	0	
11.	Trilobita							3	0	
12.	Arachnida					•••		7	6	
*13.	Insecta							30	0	
14.	Protochorda	ata						2	0	
15.	Pisces							17	0	
16.	Amphibia a	nd Rep	tilia					179	6	
	Aves							19	6	
18.	Mammalia					•••		17	6	
19.	List of New	Genera	a and S	Subgene	era			3	0	

^{*} Obtainable only from the Commonwealth Institute of Entomology, 41, Queen's Gate, London, S.W.7.

14. PROTOCHORDATA

INCLUDING

ENTEROPNEUSTA AND PTEROBRANCHIA

BY

M. BURTON, D.Sc.

I.—TITLES

- 1.—Abbott, D. P. Bostrichobranchus digonas, a new molgulid ascidian from Florida. J. Wash. Acad. Sci. 41 (9) 1951 pp. 302–307 4 figs.
- 2.—Aguazo, C. G. Lamparas animadas. Bol. Hist. nat. Soc. Habana 2 (6) 1951. [Protochordates p. 74].
- 3.—Alfano, G. B. Commemorazione del Prof. Guiseppe Zirpolo. Boll. Soc. Nat. Napoli 59 1951 pp. 39-64 port.
- 4.—Anon. The early development of amphioxus. Med. biol. Illust. 1 (4) 1951 pp. 172–175 8 figs.
- 5.—Ärnbäck-Christie-Linde, A. Ascidiacea. Part II. Further zool. Res. Swed. Antarct. Exp. 4 (4) 1950 pp. 1–41 6 pls. 10 figs.
- 6.—Berrill, N. J. Regeneration and budding in tunicates. Biol. Rev. 26 1951 pp. 456-475 3 figs.
- 7.—Brewin, B. I. Ascidians from Otago coastal waters. Trans. Proc. roy. Soc. N.Z. 78 1950 pp. 54–93 5 figs.
- 8.—Brewin, B. L. Ascidians of New Zealand. Part VI. Ascidians of the Hauraki Gulf, Part II. Trans. Proc. roy. Soc. N.Z. 79 (1) 1951 pp. 104–113 8 figs.
- 9.—Burdon-Jones, C. Studies on the larvae of Saccoglossus and their culture. Challenger Soc. London 1950 3 (2) p. 12.
- 10.—Burdon-Jones, C. Records of British Enteropneusta. Nature, Lond. 165 1950 pp. 636-637.

- 11.—Burdon-Jones, C. Observations on the spawning behaviour of Saccoglossus horsti Brambell and Goodheart, and of other Enteropneusta. J. Mar. biol. Ass. U.K. 29 (3) 1951 pp. 625-638.
- 12.—Carlisle, D. B. Alcune osservazioni sulla meccanica dell' alimentazione della Salpa. Pubbl. Staz. zool. Napoli 22 1950 pp. 146–154 3 figs.
- 13.—Carlisle, D. B. Gonadotrophin from the neural region of ascidians. Nature, Lond. 166 1950 p. 737
- 14.—Carlisle, D. B. Corpora lutea in an ascidian, *Ciona intestinalis*. Quart. J. micr. Sci. 92 (2) 1951 pp. 201–203 1 fig.
- 15.—Carlisle, D. B. On the hormonal and neural control of the release of gametes in ascidians. J. exp. Biol. 28 (4) 1951 pp. 463-471 1 fig.
- 16.—Colwin, A. L. & Colwin, L. H. Relationships between the egg and larva of Saccoglossus kowalevskii (Enteropneusta): axes and planes: general prospective significance of the early blastomeres. J. exp. Zool. 117 1951 pp. 111-137 5 figs.
- 17.—Caspers, H. Quantitative Untersuchungen über die Bodentierwelt des Schwarzen Meeres im bulgarischen Küstenbereich. Arch. Hydrobiol. 45 (1-2) 1951. [Tunicates p. 96.]
- 18.—Einor, O. L. Stratigraphy of Permian in Transcaucasus. C.R. Acad. Sci., URSS N.S. 78 1951 pp. 997–999. [In Russian.]

- 19.—Florey, E. von. Reizphysiologische Untersuchungen an der Ascidie Ciona intestinalis L. Biol. Zbl. 70 (11-12) 1951 pp. 523-530 3 figs.
- 20.—Goldberg, E. D., McBlair, W. & Taylor, K. M. The uptake of vanadium by tunicates. Biol. Bull. Wood's Hole 101 1951 pp. 84–94 5 figs. 4 tabs.
- 21.—Guiler, E. R. Notes on the intertidal ecology of the Freycinet Peninsula. Pap. roy. soc. Tasm. 1950 1951 pp. 53-70 3 pls. 4 figs.
- 22.—Hirai, E. A comparative study on the structures of the tadpoles of Ascidians. Sci. Rep. Tôhoku Univ. (4) 19 (1) 1951 pp. 79-87 3 figs.
- 23.—Johnston, T. H. & Muirhead, N. G. Cephalodiscus. Rep. B.A.N.Z. Antarct. Res. Exped. 1929–31 1B 3 1951 pp. 89–120 3 pls. 30 figs.
- 24.—Jørgensen, C. B. Feeding rates of Sponges, Lamellibranchs and Ascidians. Nature, Lond. 163 1949 p. 912.
- 25.—Komai, T. The homology of the "Notochord" found in pterobranchs and enteropneusts. Amer. Nat. 85 1951 pp. 270-276.
- 26.—Kott, P. Corella halli n. sp., a new ascidian from the English Channel. J. Mar. biol. Ass. U.K. 30 1951 pp. 33–36 1 fig.
- 27.—Kozlowski, R. Les graptolithes du Tremadoc de la Pologne. Palaeont. Polonica 3 1948. [Protochordates pp. 195–203].
- 28.—Lameere, A. Évolution des Tuniciers. [C.R.] Ass. franç. Av. Sci. 63 1941 pp. 657-659.
- 29.—Leghissà, S. Sulla guaine ectoplasmatiche dell'uovo di Ascidie (*Ascidia* malaca, *Ascidiella aspersa* e *Phallusia* mammillata). Riv. Biol. N.S. 43 (2) 1951 pp. 187–197 2 pls. [English summary.]

McBlair, W. see Goldberg, E. D.

- **30.—Medawa**, P. B. Asymmetry of larval *Amphoxus*. Nature, Lond. **167** 1951 pp. 852–853.
- 31.—Millar, R. H. The stolonic vessels of the Didemnidae. Quart. J. micr. Sci. 92 1951 pp. 249–254 3 figs.
- 32.—Millar, R. H. The development and early stages of the ascidian *Pyura squamulosa* (Alder). J. Mar. biol. Ass. U.K. 30 1951 pp. 27-31 1 fig.

- 33.—Minganti, A. Ricerche istochimiche sulla localizzazione del territorio presuntivo degli organi sensoriali nelle larva di Ascidie. Pubbl. Staz. zool. Napoli 23 1951 pp. 52-57 1 fig.
- **34.**—Minganti, A. Esperienze sulle fertilizine nelle Ascidie. Pubbl. Staz. Zool. Napoli **23** 1951 pp. 58–65.

Minganti, A. see Reverberi, G. Mistruzzi, L. U. see Urbani, E.

- 35.—Ohuye, T. Preliminary note on the survey of peroxidase-distribution in the blood and coelomic cells of various invertebrates. (The 15th report of invertebrate hematology.) Mem. Ehime Univ. Sect. I. 1 (1) 1950. [Protochordates pp. 25–26.]
- 36.—Pearse, A. S. & Williams, L. G. The biota of the reefs off the Carolinas. J. Elisha Mitchell sci. Soc. 67 (1) 1951. [Tunicates p. 144.]
- 37.—Pérès, J.-M. Expériences d'ovariotomie chez *Ciona intestinalis* L. C.R. Acad. Sci., Paris 230 1950 pp. 1616–1617.
- **38.—Praeger**, R. L. Natural History of Ireland, London **1950**. [Protochordates pp. 219–220.]
- 39.—Pérés, J.-M. Existence d'une corrélation humorale entre l'ovaire et le testicule de *Ciona intestinalis* (L.) C.R. Acad. Sci., Paris 233 1951 pp. 274–275.
- 40.—Reverberi, G. & Minganti, A. Fenomeni di evocazione nello sviluppo dell' uovo di Ascidie. Risultati dell' indagine sperimentale sull' uovo di Ascidiella aspersa e di Ascidia malaca allo stadio di otto blastomeri. Pubbl. Stat. zool. Napoli 20 1946 pp. 199–252 65 figs.
- 41.—Reverberi, G. & Minganti, A. Concerning the interpretation of the experimental analysis of the ascidian development. Acta biotheor., Leiden 9 (4) 1951 pp. 197-204.
- 42.—Romer, A. S. The vertebrate body. Philadelphia 1949. [Protochordates pp. 17–29.]
- 43.—Sawaya, P. Balanoglossus gigas Fr. Müller rediscovered on the Brazilian Coast. Nature, Lond. 167 1951 p. 730.
- 44.—Smidt, E. L. B. Animal Production in the Danish Waddensea.
 Medd. Komm. Havundersøg. Kbh. Fiskeri 11 (6) 1951. [Protochordates p. 41.]

45.—Stiasny, G. Über Tornarien. Zool. Jahrb. (Syst.) **74** 1941 pp. 361–374 4 figs.

Taylor, K. M. see Goldberg, E. D.

45a.—Thomas, H. D. A fossil species of the Pterobranch Rhabdopleura. Quart. J. geol. Soc. Lond. 106 l 1950 p. 133.

46.—Thompson, H. Pelagic Tunicates of Australia. Melbourne 1948 196 pp. 75 pls. 19 text-figs.

47.—Tokioka, T. The fauna of Akkeshi Bay. XVIII. Ascidia. Publ. Akkeshi mar. biol. Stat. No. 1 1951 pp. 1–22 2 pls. 16 figs.

48.—Tokioka, T. Contributions to Japanese Ascidian fauna, IV. Notes on some ascidians collected in Ōsaka Bay. Publ. Seto mar. biol. Lab. 1 (4) 1951 pp. 169–182 l pl., 8 figs.

49.—Tokioka, T. Record of Cyclosalpa bakeri from Japanese waters. Publ. Seto mar. biol. Lab. 1 (4) 1951 p. 183.

50.—**Ubisch**, L. von. Gibtes Organisatoren oder Induktoren im Ascidienkeim? Acta biotheor., Leidin **9** (4) 1951 pp. 185–196 9 figs.

51.—Urbani, E. & Mistruzzi, L. U. Le reazioni delle perossidasi, delle fenolasi e del glutatione studiate comparativamente nell' uovo di alcune specie di Ascidie. Pubbl. Staz. zool. Napoli 21 1947 pp. 67–82 1 pl. 15 figs.

Williams, L. E. see Pearse, A. S.

II.—SUBJECT INDEX

EVOLUTION

LAMEERE 28.

PHYSIOLOGY

Carlisle 12-15; Florey 19; Goldberg, McBlair & Taylor 20; Jørgensen 24; Ohuye 35; Pérès 37, 39.

REPRODUCTION

Anon 4; Berrill 6; Burdon-Jones 9, 11; Carlisle 15; Colwin & Colwin 16; Leghissà 29; Medawa 30; Millar 32; Minganti 33, 34; Reverberi & Minganti 40, 41; Urbani & Mistruzzi 51.

ANATOMY

HIRAI 22; KOMAI 25; MILLAR 31.

REGENERATION

BERRILL 6.

LUMINESCENCE

AGUAYO 2.

DISTRIBUTION MARINE

British Islas, Burdon-Jones 10; Kott 26; Praeger 38; Denmark, Smidt 44; Mediterranean, Stiasny 45; Black Sea, Caspers 17; Bermuda, Stiasny 45; Florida, Abbott 1; Brazil, Sawaya 43; Japan, Tokioka 47-49; Caroline Islands, Peaese & Williams 36; Australia, Thompson 46; Tasmania, Guiler 21; New Zealand, Brewin 7-8; Antarctic, Ärnbäck-Christie-Linde 5; Johnston & Murhead 23.

FOSSIL

Eccene.—THOMAS 45a.

Permian.—EINOR 18.

Silurian.—Kozlowski 27.

III.—SYSTEMATIC INDEX

TUNICATA

Evolution, Lameere 28; comparative study of tadpoles, Hirai 22; pelagic spp. of Australia, Thompson 46.

Alloeocarpa minuta sp. n. New Zealand, Brewin Trans. R. Soc. N.Z. 79 (1) 1951 p. 110 fig. 6; A. incrustans rugosa subsp. n. Falklands, Ärnbäck-Christie-Linde Further Zool. Res. Swed. Antarct. Exp. 4 (4) 1950 p. 10 pl. i fig. 5.

Amaroucium oamaruensis sp. n. New Zealand, Brewin Trans. Proc. Roy. Soc. N.Z. 78 (1) 1950 p. 55 fig. 1; A. nottii sp. n. New Zealand, Brewin Trans. R. Soc. N.Z. 79 (1) 1951 p. 105 fig. 1.

Bostrichobranchus digonas sp. n. Florida, Abbott J. Wash. Acad. Sci. 41 (9) 1951 p. 302 figs. 1-4.

Ciona intestinalis corpora lutea, Carlisle 14; physiology, Florey 19.

Corella Lalli sp. n. English Channel, Kott J. Mar. biol. Ass. U.K. **30** (1) p. 33 fig 1. Cyclosalpa bakeri, Tokioka 49.

Didemnum okudai sp. n. Japan, Токтока Publ. Akkeshi mar. biol. Stat. 1 1951 p. 3 fig. 2.

Distaplia yezoensis sp. n. Japan, Токлока Publ. Akkeshi mar. biol. Stat. 1951 p. 4 fig. 3; D. japonica sp. n. Japan, Токтока Publ. Seto mar. biol. Lab. 1 (4) 1951 p. 169 fig. 1.

Holozoa cylindrica glebulenta form. n. Grahamland, Ärnbäck Christie-Linde Further Zool. Res. Swed. Antarct. Exp. 4 (4) 1950 p. 36 pl. vi figs. 31–32.

Leptoclinum takeharai sp. n. Japan, Токіока Publ. Akkeshi mar. biol. Stat. 1 1951 p. 21 fig. 16.

Polyzoa vesiculiphora sp. n. Japan, Tokioka Publ. Akkeshi mar. biol. Stat. 1 1951 p. 11 pl. ii figs. 1–2 text-fig. 9; P. pacifica sp. n. Japan, Tokioka Publ. Seto. mar. biol. Lab. 1 (4) 1951 p. 173 fig. 4; P. coccinea crebra p. 14 pl. ii fig. 8 text-fig. 2, coccinea spicea p. 15 pl. ii fig. 9 South Georgia. coccinea fruticosa p. 16 pl. iii figs. 10–11 text-fig. 3 Argentina form. n., Ärnbäck-Christific Linde Further Zool. Res. Swed. Antarct. Exp. 4 (4) 1950.

Pyura picta sp. n. New Zealand, Brewin Trans. Proc. roy. Soc. N.Z. 78 (1) 1950 p. 58 fig. 3; P. squamulosus development, Millar 32.

Styela isibasii sp. n. Japan, Токюка Publ. Seto mar. biol. Lab. 1 (4) 1951 p. 179 pl. xi fig. 5 text-fig. 7; S. plicata tenuis form. n. Japan, Токюка Publ. Seto mar. biol. Lab. 1 (4) 1951 p. 177 fig. 6.

Syndendrodoa composita sp. n. Japan, Токіока Publ. Akkeshi mar. biol. Stat. 1 1951 p. 14 fig. 11.

Synoicum haurakiensis sp. n. New Zealand, Brewin Trans. roy. Soc. N.Z. 79 (1) 1951 p. 106 fig. 2. Xenobranchion gen. n., insigne sp. n. Falklands, Ärnbäck-Christie-Linde Further Zool. Res. Swed. Antarct. Exp. 4 (4) 1950 p. 20 pl. iv figs. 14-20.

HEMICHORDATA

Enteropneusta of British Isles, Burdon-Jones 10.

Balanoglossus gigas from Brazil, SAWAYA 43.

Saccoglossus horsti spawning behaviour, Burdon-Jones 11; development, Burdon-Jones 9; S. kowalevskii relations between egg and larva, Colwin & Colwin 16.

Tornaria wheeleri sp. n. Bermuda, STIASNY Zool. Jahrb., Jena (Syst.) 74 1941 p. 365 fig. 2.

CEPHALOCHORDATA

Amphioxus early development, Anon

PTEROBRANCHIA

Cephalodiscus (Orthoecus) australiensis sp. n. Antarctic, Johnston & Muirhead Rep. B.A.N.Z. Antarct. Res. Exped. 1929-31 1B (3) 1951 p. 99 pl. i fig. 3 pl. iii fig. 1 text-figs. 1-30.

†Eocephalodiscus polonicus sp. n. Silurian Poland, Kozlowski Palaeont. Polonica 3 1948 p. 195 pl. xxxiii figs. 1-2, pl. xxxiv figs. 1-38 text-fig. 62.

†Rhabdopleura eocenica sp. n. Eocene England, Thomas Quart. J. geol. Soc. London 106 (1) 1950 p. 133.

PHORONIDA

(Vacant)

POGNOPHORA

(Vacant)

GRAPTOLITES

(Vacant)